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**Our File 16073**

**International Patent Application PCT/CH03/00244; Ascom Energy Systems AG**  
**Correction of errors and priority document**

Dear Sirs,

**1 Correction of the priority claim according to Rule 26bis PCT**

On 11 April 2003 the above-mentioned international patent application was filed with the Swiss Federal Institute of Intellectual Property (IGE) in Bern. Under item 1 in box no. VI of the request the priority of the US provisional application US 60/372,132 (filing date 12 April 2002) has been claimed. Unfortunately, an incorrect serial number has been given on the request. Instead of US 60/372,132, the number US 60/372,123 has been cited.

According to Rule 26bis PCT we herewith request a correction of the priority claim by replacing the serial number US 60/372,123 in box no. VI (item 1) by the correct serial number US 60/372,132.

**2 Correction of an obvious error in the description according to Rule 91, PCT**

Since the serial number of the priority application has also been cited in the description (page 1), we herewith request a correction of this obvious error by replacing page 1 of the originally filed specification with the enclosed substitute page 1.

### 3 Priority document

Please find enclosed the (correct) priority document US 60/372,132 for the international patent application No. PCT/CH03/00244.

### 4 Notification of Receipt of Record Copy

Furthermore, please be informed that we have not yet received the "Notification of Receipt of Record Copy" for the above-mentioned international patent application. We kindly ask you to let us have said document at your earliest convenience.

Yours faithfully,

**Keller & Partner  
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Roman Stäbler

- substitute page 1
- priority document US 60/372,132

## SOFT SWITCHING HIGH EFFICIENCY FLYBACK CONVERTER

### Cross Reference to Related Applications

Priority is claimed from U.S. provisional patent application Serial No. 60/372,132 entitled "Soft Switching High Efficiency Flyback Converter" filed April 12, 2002 in the name of Ionel D. Jitaru. That application is incorporated herein by reference.

### Field of the Invention

This invention relates to DC-DC converters and more particularly to a driving/synchronization technique used to achieve zero voltage switching and regulate the output of DC-DC converters.

### Background of the Invention

In order to miniaturize power supplies, the control for power supplies should be simplified. Switching frequencies have been increased to reduce capacitive and magnetic elements in miniaturized power supplies. Still, in today's and future power supplies there is a need to reduce the number of components needed to control the power supply. Among the greatest challenges is communication across the isolation boundary. Several techniques exist. These include opto-couplers, transformers, radio frequency devices, etc. This invention provides a method and circuit that use the same transformer that is used for power conversion, i.e. the power transformer. The technique of this invention is not to send complicated encoded information, but to actually change the supply's effective duty cycle from the secondary.

A preferred embodiment of this invention is a self-oscillating flyback converter. The method and circuitry of the invention can be used with other topologies as well. The flyback converter is believed the best topology to illustrate the invention and the most easily understood. Plus, this topology offers a reduced number of control parts, which illustrates the advantage of this invention and makes it a preferred embodiment.

Fig. 2A shows a typical self-oscillating flyback converter in which an input voltage source 16 supplies a primary winding 18 of a transformer 32 in series with a